NanoVIP® CUBE™

Analizzatore portatile della Qualità dell'Energia per sistemi monofase, bifase, trifase (bilanciati e non), in bassa e media tensione.
Portable Power Quality analyzer for mono, bi, three phases (balanced and unbalanced), medium and low voltages systems.

NanoVIP® CUBE™ è un moderno e potente analizzatore portatile di rete sviluppato per l'analisi professionale dei consumi e della power quality delle reti elettriche più complesse.
Può essere utilizzato su reti monofase, bifase, trifase in bassa e media tensione. Le funzionalità evolute e il software di analisi in dotazione lo rendono uno strumento adatto alle esigenze professionali più gravose.

EN **NANOVIP® CUBE™** is a modern, powerful, portable network analyzer developed for professional analysis of consumption and power quality of the most complex electrical networks.
It can be used on single-phase, two-phase, three-phase (balanced and unbalanced) networks, low and medium voltage.

PRECISIONE NELLA MISURA, POTENZA NELL'ANALISI

- Utilizzabile su impianti: monofase, bifase, trifase equilibrato con o senza neutro, trifase squilibrato con o senza neutro
- Analisi energetica tradizionale completa (V, I, P, Q, S, F, PF, THD%, valori istantanei / minimi / massimi / medi / contatori di energia assorbita e generata sia trifase che per ogni singola fase).
- Analisi dei parametri di qualità dell'energia
- Armoniche di corrente e tensione per ogni fase e per il neutro fino alla 50° (7° a 400Hz)
- Sbilanciamento delle fasi di tensione
- Interruzioni di rete, sovratensioni, buchi di tensione
- Test di conformità alla normativa EN 50160
- Misura reale della corrente di neutro
- Visualizzazione delle forme d'onda di correnti e tensioni
- Impostazione di 4 fasce tariffarie con visualizzazione dei relativi costi
- Configurazione e visualizzazione di 20 allarmi su grandezze e soglie impostabili
- Check automatico del corretto collegamento dello strumento all'impianto
- Realizzazione di campagne di misura di lunga durata (oltre 24 in autonomia, illimitato se collegato alla rete)
- Batterie ricaricabili ad alta capacità che garantiscono oltre 24h di lavoro
- Vettorimetro
- Contatore Start&Stop in tempo reale
- Controllo remoto
- Rapporto di conformità EN50160

MEASUREMENT PRECISION, POWERFUL ANALYSIS

- Can work on networks: single-phase, two-phase, three-phase balanced with or without neutral, three-phase unbalanced with or without neutral
- Full traditional energy analysis (V, I, P, Q, S, F, PF, THD%, instantaneous values / minimum / maximum / average, energy meters absorbed and generated both three-phase for each phase).
- Analysis of power quality parameters
- The current and voltage harmonics for each phase and for the neutral up to 50°
- Imbalance of power phases
- Network outages, surges, sags
- Conformance testing to EN 50160
- Real measurement of the neutral current
- Display of the waveforms of currents and voltages
- 4 tariff bands setting with the related costs display
- Configuration and display of alarms on sizes 20 and settable
- Automatic check of the correct connection of the implant tool
- Capable to do long-term measurement campaigns (over 24 independently, unlimited if connected to the network)
- High capacity rechargeable batteries that guaranties over 24h of work
- Phasor Diagram
- Real time start & stop counter
- Remote control (USB)
- Compliance EN50160 report

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CASE:	
Dimensions	203x116x53mm
Material	ABS with self-extinguishing V0 grade
Protection class	IP30
Weight	580 g
DISPLAY:	
Dimensions	68x68mm
Type	128x128 FSTN Negative dot matrix graphic LCD
Backlight	White LED
Languages	English - Spanish - Italian - German - French
KEYPAD:	
Type	Membrane keypad with 10 double-function keys
POWER SUPPLY:	
External power supply	wall-plug switching; input 100-240VAC ±10% 47-63Hz with interchangeable plug; output 7.5VDC - 12W
Battery pack	4 x AA NiMh 2100mAh
Duration of the battery charge	>24h (wireless off)
CONNECTING SYSTEMS:	
Systems frequencies	50Hz – 60Hz – 400Hz
Single phase	✓
Two phase	✓
Three-phase, 3-wires, balanced	✓
Three-phase, 3-wires, unbalanced	✓
4-phase, 4-wires, balanced	✓
4-phase, 4-wires, unbalanced	✓
CONNECTIONS:	
Voltages	Flexible cables L = 1.5m; 2.5mm^2 - 36A; 1000V CAT III - 600V CAT IV with a 4mm, 90° protected blade plug connector, crocodile clips with a 45mm opening (for sections up to 32mm) and magnetic captors
Currents	Elcontrol Energy Net interchangeable amperometric sensors
Solar radiation	-
PT100	-
Anemometer	-
Transducers	-
FUNCTIONS:	
Traditional electrical analisys	V, I, P, Q, S, F, PF, THD(V)%, THD(I)%, cosφ, φ, peaks, minimums, maximums, averages, max. demands, etc.
Neutral current	Measured
Three phase counters	kWh, kVArh, kVAh, both absorbed that generated
Counters for each single phase	kWh, kVArh, kVAh, both absorbed that generated
Cogeneration	✓
Waveforms	V & I
Harmonics	Values and histograms up to the 50th order
Sags	Dips, swells & interruptions
Transients	Overvoltages & overcurrents
Unbalance	✓
Test EN 50160	✓
Inrush current	✓
DC measures	✓
K factor	Up to the 25th order
Alarms	Displayed
Alarms log	5 at display

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Tariff bands	4
Energy costs	✓
IEC 61724 network parameters	✓
Test EN 82.25	-
OSU™ (One Shot UPS)	-
Measurament campaigns	unlimited, up to fill the memory card
MEASUREMENTS:	
Sampling frequency	128 samples per cycle (adaptive in 40Hz-70Hz range) 16 samples per cycle at 400HZ
Data record rate	1 sec.
Data storage rate	User selectable: 1", 5", 3", 1', 5', 15'
Type of connections available	Three-phase (3 or 4 leads), two-phase (2 leads), and single phase grid
Type of grid which can be connected	Low and medium voltage (LV and MV)
VOLTAGE (TRMS)	
Channels	3 channels with common neutral + 1 independent, auxiliary channel
Input impedance	4 Mohm
Scales	2
Direct measurement	Phase-phase: 7-1000VAC 40-70Hz Phase-neutral: 5-600VAC 40-70Hz Aux: 5-1000VAC 40-70Hz, 10-1400VDC
Measurement with VT	Ratio: 1-60000 Maximum value which can be displayed: 20MV
Permanent overload	Phase-phase: 1200VAC Phase-neutral: 700VAC Aux: 1200VAC, 1700VDC
Sensitivity	5VAC Phase-neutral, 7VAC Phase-phase, 10VDC
CURRENT (TRMS)	
Channels	5 independent channels
Input impedance	10KOhm
Scales	4
Measurement with current clamps	Ratio: 1-60000 Maximum value which can be displayed: 500KA
Sensitivity	0,2% of F.S.
POWERS	
Single phase power	Values < 999 GW, Gvar, GVA
Total power	Values < 999 GW, Gvar, GVA
POWER COUNTERS	
Maximum value before reset	99999999 kWh, kvarh, kVAh
ACCURACY	
RMS voltages:	
Scale 1	±0.25% + 0.1%FS (2) @ RMS V < 350VAC (1)
Scale 2	±0.25% + 0.05%FS (2) @ RMS V > 350VAC (1)
RMS currents:	
Scale 1	±0.25% + 0.1%FS (2) @ RMS I < 5% IN clamp (1)
Scale 2	±0.25% + 0.05%FS (2) @ 5% < RMS I < 20% IN clamp (1)
Scale 3	±0.25% + 0.05%FS (2) @ 20% < RMS I < 50% IN clamp (1)
Scale 4	±0.25% + 0.05%FS (2) @ > 50% IN clamp (1)
Power	±0.5% + 0.05%FS (2)
Power Factor (PF)	±0.5°
Frequency	±0.01 Hz (40-70Hz)
Active power count (kW)	Class 0.5

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Reactive power count (kVar)	Class 1
HARMONIC ANALISYS	Up to 50th order Up to 7th at 400Hz
ANALYSIS of EN50160 parameters	
Interruptions	>500mS
Dips	>500mS
Swells	>500mS
Transient ANALYSIS	
Swells and overcurrents	>150uS
Inrush current analysis	RMS continuous sampling every 2 periods – Duration 1, 2, 5, 10 sec.
COMMUNICATION:	
MRH™	-
Server mode	-
Connectable MRH™ clients	-
Client mode	-
Zigbee®	-
Maximum distance outdoor	-
Maximum distance indoor	-
Mesh network	-
Wireless to PC	-
USB	to PC
DATA STORAGE:	
Internal memory	64kB
External memory	Micro SD (4GB included)
OPERATING CONDITIONS:	
Operating temperature	-10 to +55 °C
Storage temperature	-20 to +85 °C
Relative humidity	Max 95%
Maximum altitude a.s.l. (600V CAT III)	2000 m
EC COMPLIANCE:	
Directives	93/68/EEC (Low Voltage Electrical Equipment); 89/336/EEC and 2004/108/EC (EMC - Electromagnetic Compatibility); 2006/95/EC - 72/23/EEC (LVD - Low Voltage Directive); 2002/95/EC (RoHS - Restriction of Hazardous Substances); 2002/96/EC and 2003/108/EC (WEEE - Waste Electrical and Electronic Equipment); IEC 61724
REFERENCE STANDARDS:	
Safety	EN 61010-1
Electromagnetic Compatibility (EMC)	EN 61326 EN 61326/A1 EN 61326/A2 EN 61326/A3
Temperature	IEC 60068-2-1 (Operating temperature) IEC 60068-2-2 (Storing temperature)
Vibrations	IEC 60068-2-6
Humidity	IEC 60068-2-30 (Humidity)
Overload	IEC 60947-1